

Riddle
Algebra 2
Exam Review

Name: _____

1. Solve. $5(2x - 6) = 7x - 3$

2. Solve. $|x + 3| + 10 = 2$

3. Solve. $0.38 > \frac{2x - 7}{5}$

4. Solve. $9 \leq 7 - x \leq -1$

5. Solve. $|2x - 3| \leq 7$

6. Find the slope of the line that passes through (2,6) and (-7,8).

7. What is the slope of the line $y = -2$?

8. What is the slope of a line that is parallel to the graph of $2x + 3y = 5$?

9. Write an equation in slope-intercept form for the line that has a slope of -4 and passes through (1,2).

10. Solve: $5x + 2y = 1$
 $y = 1 - 3x$

11. Solve: $3x + 4y = 12$
 $2x - 3y = -9$

12. Solve by graphing: $x - y = 5$
 $x + 2y = 2$

13. Graph the system of inequalities: $2x - y \geq 2$
 $x + 3y \leq 6$

14. Simplify: $(5 + 2)(1 + 3)$.

15. Simplify: $(4 - 12i) - (-8 + 4i)$.

16. Simplify: $\frac{4 - 2i}{7 + 3i}$

17. Solve: $x^2 - 3x = 18$.

18. Solve: $3x^2 = 20 - 7x$

19. Solve: $3x^2 = 5x - 1$.

20. Use the value of the discriminant to tell the number and type of roots: $2x^2 - 7x + 9 = 0$.

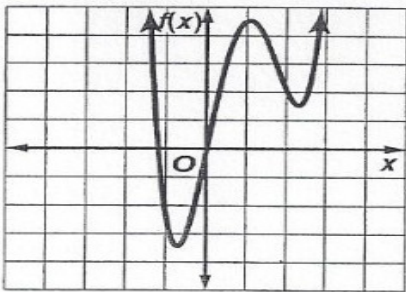
21. Use the value of the discriminant to tell the number and type of roots: $x^2 + 20 = 12x - 16$

22. Simplify: $(3a^3 - 7a^2 + a) - (6a^3 - 4a^2 - 8)$.

23. Simplify: $(7m - 8)^2$.

24. Divide using synthetic division : $(2x^3 - 5x + 40) \div (x + 3)$?

For questions 25 thru 28, use the graph below.



25. What is the degree of the function?

26. How many real roots?

27. How many imaginary roots?

28. Is the function cubic, quartic, or quintic?

29. List all of the possible rational zeros of $f(x) = 3x^3 - 2x^2 + 7x + 6$. (p/q)

30. Find ALL of the rational zeros of $f(x) = 4x^3 - 3x^2 - 22x - 15$.

31. Simplify $m^{9\sqrt{5}} \div m^{\sqrt{5}}$.

32. Solve: $\left(\frac{1}{36}\right)^n = 216^{n+5}$

33. Write the equation $6561^{\frac{1}{4}} = 9$ in logarithmic form.

34. Solve: $\log_4 x - \log_4 5 = \log_4 60$

35. Evaluate: $\log_2 4$

36. Simplify: $\frac{x^2+5x+4}{x^2+2x+1} \cdot \frac{2x+2}{x+4}$

37. Simplify: $\frac{a+b}{3} \div \frac{a^2+b^2}{12}$

38.
$$\frac{\frac{4s^2-36}{8s^2-24s} \cdot \frac{12s+36}{2s^2-6s}}$$

39. $\frac{6n}{n^2-9} - \frac{3}{n+3}$

40. Determine the equations of any vertical asymptotes of the graph of

$$f(x) = \frac{x^2+5x+6}{x-1}$$

41. Solve $\frac{n}{n-4} + n = \frac{12-4n}{n-4}$

42. Simplify: $\sqrt{64n^6w^4}$

43. Simplify: $\sqrt[3]{625x^5}$

44. Simplify: $\sqrt{5} + \sqrt{20} - \sqrt{27} + \sqrt{147}$

45. Write the radical $\sqrt[6]{y^4}$ using rational exponents.

46. Solve: $\sqrt{3x+4} = 5$

47. Rewrite $\frac{2\pi}{9}$ radians in degree measure.

48. Which angle is coterminal with an angle in standard position measuring $-\frac{5\pi}{9}$?

49. Find the exact value of $\cot 450^\circ$.

50. Find the exact value of $\cos(-45^\circ)$

Graph the following:

a. $y = |x| - 3$

b. $y = 2x + 2$

c. $y = (x + 1)^2 - 4$

d. $y = 2^{-x}$

e. $y = \log_2(x + 2)$

f. $y = 2\sqrt{x}$

g. $y = \frac{2}{x+2}$

h. $y = \sqrt[3]{x-1}$

i. $y = -3\sin x$

j. $y = \cos 2x$

k. $y = \tan(x - 45^\circ)$